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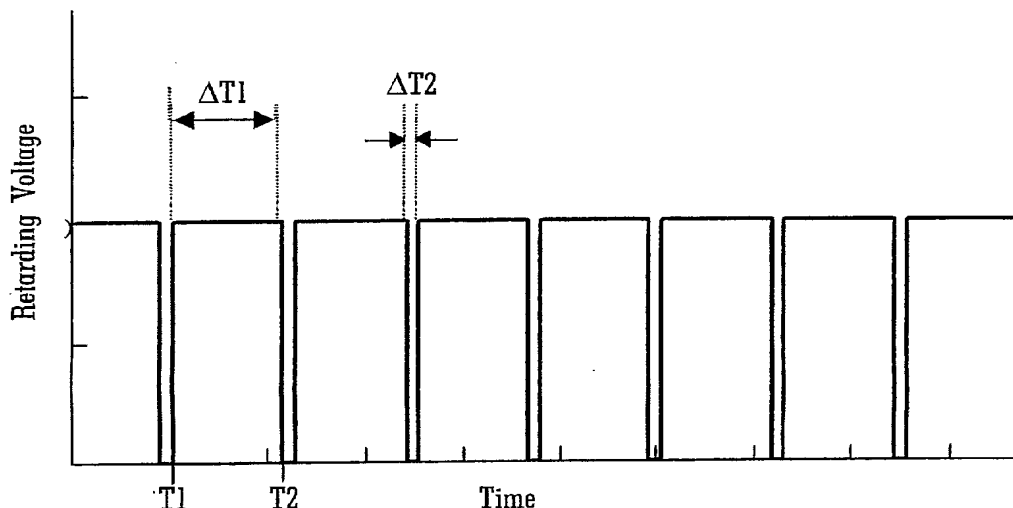
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(54) Title: MASS SPECTROMETER



(57) Abstract: A mass spectrometer is disclosed comprising an ion beam attenuator which attenuates an ion beam repeatedly switching between a zero transmission mode of operation during a time period ΔT_1 and a non-zero transmission mode of operation during a time period ΔT_2 . The degree of attenuation of the ion beam can be varied by varying the mark space ratio $\Delta T_2/\Delta T_1$. The ion beam attenuator may release ions in packets or pulses but the packets or pulses of ions may be converted into a continuous ion beam by a relatively high pressure ion guide or gas collision cell arranged downstream of the ion beam attenuator.

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